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NiceZyme View of ENZYME: EC 3.5.3.1

Official Name

Arginase.

Alternative Name(s)

Arginine amidinase.

Canavanase.

Reaction catalysed

L-arginine + H(2)O <=> L-ornithine + urea

Cofactor(s)

Manganese.

Comment(s)

Also hydrolyzes alpha-N-substituted L-arginines and canavanine.

Human Genetic Disease(s)

Argininemia   MIM:207800

Cross-references

Biochemical Pathways; map number(s)	F8
PROSITE	PDOC00135
BRENDA	3.5.3.1
PUMA2	3.5.3.1
PRIAM enzyme-specific profiles	3.5.3.1
Kyoto University LIGAND chemical database	3.5.3.1
IUBMB Enzyme Nomenclature	3.5.3.1
IntEnz	3.5.3.1
MEDLINE	Find literature relating to 3.5.3.1
MetaCyc	3.5.3.1

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P46637, ARGI1_ARATH;    P05089, ARGI1_HUMAN;    Q61176, ARGI1_MOUSE;
Q95JC8, ARGI1_PIG;      Q95KM0, ARGI1_RABIT;    P07824, ARGI1_RAT;
P37818, ARGI1_SCHPO;    P30759, ARGI1_XENLA;    Q9ZPF5, ARGI2_ARATH;
Q58DL1, ARGI2_BOVIN;    P78540, ARGI2_HUMAN;    O08691, ARGI2_MOUSE;
Q4VK78, ARGI2_RABIT;    O08701, ARGI2_RAT;      Q10066, ARGI2_SCHPO;
P14012, ARGI_AGRT5;     Q74ZW4, ARGI_ASHGO;     P53608, ARGI_BACCD;
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KEGG   **ENZYME: 3.5.3.1**

Entry	EC 3.5.3.1 Enzyme
Name	arginase; arginine amidinase; canavanase; L-arginase; arginine transamidinase
Class	Hydrolases Acting on carbon-nitrogen bonds, other than peptide bonds In linear amidines
Sysname	L-arginine amidinohydrolase
Reaction	L-arginine + H2O = L-ornithine + urea [RN:R00551]
Substrate	L-arginine [CPD:C00062] H2O [CPD:C00001]
Product	L-ornithine [CPD:C00077] urea [CPD:C00086]
Comment	Also hydrolyses alpha-N-substituted L-arginines and canavanine.
Pathway	PATH: map00220 Urea cycle and metabolism of amino groups PATH: map00330 Arginine and proline metabolism
Ortholog	KO: K01476 arginase
Genes	HSA: 383(ARG1) 384(ARG2) MMU: 11846(Arg1) 11847(Arg2) RNO: 29215(Arg2) 29221(Arg1) SSC: 397115(ARG1) XLA: 379198(MGC53991) 380109(arg1-prov) 397788(LOC397788) XTR: 448358(arg1-prov) DME: CG18104-PA(CG18104) ATH: At4g08870(T3H13.10) At4g08900(T3H13.7) SCE: YPL111W(CAR1) AGO: AGR225C(AGR225Cp) CAL: orf19.3934(CAR1) SPO: SPAC3H1.07(aru1) SPBP26C9.02c(car1) CNE: CNG00550 TBR: Tb927.8.2020(Tb08.26N11.490) LMA: LmjF35.1480 EHI: 6.t00005 XFA: XF1250 XFT: PD0517(rocF) XCC: XCC3926(argI) XCB: XC_4015 XCV: XCV4102(argI) XAC: XAC4009(argI) XOO: XOO0435(argI) PSB: Psyr_2212 NOC: Noc_1712 RSO: RSc0158(RS01028) REU: Reut_B4054 BPE: BP0538 BPA: BPP0749 BBR: BB0835